UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,119	07/07/2003	Carmel M. Lynch	226272003901	9105

25226 7590 09/12/2005

MORRISON & FOERSTER LLP
755 PAGE MILL RD
PALO ALTO, CA 94304-1018

EXAMINER	
GUZO, DAVID	

ART UNIT	PAPER NUMBER
1636	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/615,119	LYNCH ET AL.	
	Examiner	Art Unit	
	David Guzo	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/26/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

35 USC 102 Rejections

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-2, 4-9, 11-14, 16-19 and 21-25 rejected under 35 U.S.C. 102(a) as being anticipated by Wadsworth et al.

Applicants and Wadsworth et al. (cited by applicants, WO 97/09441, published 3/13/97, see whole document, particularly pp. 11-18, Figs. 1-4 and 7 and Claims 1-8) recite a recombinant polynucleotide sequence encoding an AAV packaging cassette comprising at least one AAV packaging gene (i.e. rep and/or cap, etc.) amplifiably linked to an activating element (i.e. an AAV ITR having TRS and a rep binding motif, see Wadsworth et al., paragraph bridging pp. 14-15) which can be an inducible replication origin (which can be viral) activated by a helper function provided by adenovirus. Applicants and Wadsworth et al. also recite a method for producing high-titer stocks of rAAV vectors containing a heterologous gene of interest comprising expressing the above AAV packaging cassette and said rAAV vector as well as reciting a method for generating a cell line capable of producing high titer stocks of said rAAV. Finally, both applicants and Wadsworth et al. recite a AAV packaging cell line produced by the above method and an AAV virus containing an rAAV produced by the above method. Therefore, Wadsworth et al. teaches the claimed invention.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Flotte et al.

Both applicants and Flotte et al. (cited by applicants, WO 95/13365, published 5/18/95, see whole document, particularly pp.19-21) recite AAV virions comprising rAAV vectors containing a heterologous gene of interest. It is noted that applicants claim the rAAV vectors in a product by process context. Even though product by process claims are limited by and defined by the process, determination of patentability is based upon the product itself. Given that the claimed rAAV is the same (absent evidence to the contrary) as the rAAV disclosed by Flotte et al., it must be considered that the claim is unpatentable even though the prior art product was made by a different method (See MPEP 2113).

Claims 1-2, 7, 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Samulski et al.

Applicants and Samulski et al. (cited by applicants, J. Virol., 1989, Vol. 63, No. 9, pp. 3822-3828, see whole article, particularly the "Materials and Methods" section) recite a recombinant polynucleotide sequence encoding an AAV cassette (Samulski et al. recites *sub*201, which can be used for packaging AAV vectors) comprising at least

one AAV packaging gene (rep and/or cap) amplifiably linked to an activating element (i.e. an AAV ITR). Samulski et al. therefore teaches the claimed invention.

35 USC 103(a) Rejections

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wadsworth et al. in view of Urcelay et al.

Wadsworth et al. is applied as in the above 35 USC 102(a) rejection of claims 1-2, 4-9, etc. Wadsworth et al. does not specifically teach the use of the P1 element as an activating element.

Urcelay et al. (cited by applicants, J. Virol., 1995, Vol. 69, No. 4, pp. 2038-2046, Cited by applicants, see whole article, particularly the Abstract, Fig. 2 and the Discussion section) recites the P1 locus, its similarity to the AAV ITR (TRS and rep binding motif) and involvement in rep mediated DNA replication.

Wadsworth et al. teaches the essential features of the claimed invention minus the use of the P1 element as the activating element. The use of the P1 element would have been obvious to the ordinary skilled artisan however, because Wadsworth et al. in discussing the use of activating elements which could be substituted for the AAV ITR, recite that any activating elements which require a protein (such as the SV40 ori element activated by the T antigen) or are otherwise well known in the art can be used. Since Urcelay et al. teach the P1 element, it's similarity to the AAV ITR TRS and rep binding sites, and Urcelay et al. recites the DNA replication activity associated with rep binding to this element, it must be considered that use of the P1 element would have been an obvious choice since it clearly fits the criteria of an activating element as disclosed by Wadsworth et al., and indeed, since it possess the same rep binding elements as present in the AAV ITR, would have been a clearly obvious choice as an activating element. The ordinary skilled artisan, would have been motivated to use the P1 element because this element fits into the criteria disclosed by Wadsworth et al. for an activating element, was known in the art as an activating element and indeed contains the TRS and rep binding sites found in AAV ITR elements (which Wadsworth et al. discloses specifically as an activating element). Given the teachings of the cited prior art and the level of skill of the ordinary skilled artisan, it must be considered that

said skilled artisan would have had a reasonable expectation of success in practicing the claimed invention.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wadsworth et al. in view of Boyce (U. S. Patent 6,338,962).

Applicants claim a recombinant nucleotide sequence encoding an AAV packaging cassette comprising at least one AAV packaging gene amplifiably linked to an activating element which is a mammalian replication origin.

Wadsworth et al. is cited as in the above 35 USC 102(a) rejection of claims 1-2, 4-9, 11-14, 16-19 and 21-25. Wadsworth et al. discloses that any origin of replication "...known to those skilled in the art." can be used as an activating element. Wadsworth et al. does not specifically recite use of a mammalian replication origin as the activating element in the AAV packaging plasmid.

Boyce (cited by applicants, U.S. Patent 6,338,962, issued 1/15/02, effective filing date of 9/11/96, see whole document, particularly columns 10 and 19) recites that any of the well known mammalian origins of replication can be used in viral vectors in order to facilitate persistence (and expression) of the vector in mammalian cells.

The ordinary skilled artisan, seeking to choose a replication of origin in the context of the recited AAV vectors would have been motivated to choose a mammalian origin of replication because the AAV vectors are designed to replicate in mammalian cells and because mammalian origins of replication are well known and can be used in viral vectors in mammalian cells (Boyce). It would have been obvious for the ordinary skilled artisan to do this because Wadsworth et al. teaches that any origin of replication

known in the art can be used and because Boyce teaches that origins of replication derived from mammalian cells have been identified and can be used in viral vectors to facilitate their persistence in mammalian cells. It would have been obvious for the ordinary skilled artisan to use a origin of replication derived from a mammalian cell because the recited AAV vectors are designed to replicate in mammalian cells. Given the teachings of the cited prior art and the level of skill of the ordinary skilled artisan at the time the invention was make, it must be considered that said ordinary skilled artisan would have had a reasonable expectation of success in practicing the claimed invention.

Obviousness Type Double Patenting Rejections

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,642,051 (hereafter the '051 patent). Although the conflicting claims are not identical,

they are not patentably distinct from each other because both sets of claims recite the same recombinant polynucleotide sequences encoding AAV packaging cassettes comprising at least one packaging gene amplifiably linked to an activating element such as P1, the same method for producing high titer stocks of a rAAV vector and the same method for generating a cell line capable of producing high titter stocks of rAAV vectors. The broadest instant claims are generic to those in the '051 patent in that the instant claims read on at least one AAV packaging gene amplifiably linked to any activating element rather than just P1, as recited in the '051 patent. The claims in the '051 patent represent species of the instant generic claims and would therefore anticipate the instant claims. With regard to instant claim 25 reading on an AAV virus containing an rAAV vector produced by the method of instant claim 14, said AAV virus would be obvious over claims 6-9 of the '051 patent because the '051 patent claims recite a method for generating high titer stocks of the instantly claimed AAV viruses containing the claimed rAAV vectors. The AAV viruses obtained by practicing the method of the '051 patent would be the obvious (and only) product of the claimed method.

No Claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Guzo, Ph.D., whose telephone number is (571) 272-0767. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Irem Yucel, Ph.D., can be reached on (571) 272-0781. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Guzo
August 29, 2005

DAVID GUZO
PRIMARY EXAMINER